

What Is Claimed Is:

1. A method of forming a color filter substrate, comprising:
forming a black matrix on a substrate;
pressing a color filter transfer film onto the substrate, wherein the color filter transfer film includes color filter patterns having a plurality of colors;
irradiating the color filter transfer film with a laser beam;
removing the color filter transfer film from the substrate after irradiating the color filter transfer film, wherein the color filter patterns having the plurality of colors remain on the substrate as color filters having the plurality of colors; and
curing the color filters remaining on the substrate.
2. The method according to claim 1, wherein the plurality of colors include red, green, and blue colors.
3. The method according to claim 1, wherein the color filter transfer film includes:
a base film;
a light-to-heat conversion layer on the base film; and
a color filter layer on the light-to-heat conversion layer, wherein the color filter layer includes the color filter patterns.

4. The method according to claim 3, wherein the base film includes a transparent material.
5. The method according to claim 4, wherein the transparent material includes a polymeric material selected from a group consisting of polyester, polyethylene and polyacryl.
6. The method according to claim 3, wherein the light-to-heat conversion layer includes a material including one of carbon black, infra-red (IR) pigment, and aluminum.
7. The method according to claim 3, wherein the color filter patterns are stripe-shaped.
8. The method according to claim 1, wherein the pressing includes aligning borders of the color filter patterns in correspondence with the black matrix.
9. The method according to claim 1, wherein the irradiating includes continuously turning a laser source on and irradiating an entirety of the color filter transfer film.

10. The method according to claim 1, wherein curing color filter patterns includes heating the color filter patterns at a temperature from about 200 °C to 300 °C.
11. The method according to claim 1, further comprising:
 - forming an overcoat layer over color filters after the curing; and
 - forming a common electrode over the overcoat layer.
12. A color filter transfer film, comprising:
 - a base film;
 - a light-to-heat conversion layer on the base film; and
 - a color filter layer on the light-to-heat conversion layer, wherein the color filter layer includes color filter patterns having a plurality of colors.
13. The color filter transfer film according to claim 12, wherein the plurality of colors include red, green, and blue colors.
14. The color filter transfer film according to claim 12, wherein the base film includes a transparent material.
15. The color filter transfer film according to claim 14, wherein the transparent material includes a polymeric material selected from a group consisting of polyester, polyethylene and polyacryl.

16. The color filter transfer film according to claim 12, wherein the light-to-heat conversion layer includes an organic chemical compound including one of carbon black and infra-red (IR) pigment.
17. The color filter transfer film according to claim 12, wherein the light-to-heat conversion layer includes an inorganic material including one of aluminum and aluminum oxide.
18. The color filter transfer film according to claim 12, wherein the color filter patterns are stripe-shaped.
19. A method of forming a color filter transfer film, comprising:
 - providing a base film;
 - forming a light-to-heat conversion layer on the base film;
 - forming a color filter layer on the light-to-heat convert film, wherein the color filter layer includes color filter patterns having a plurality of colors.
20. The method according to claim 19, wherein the plurality of colors include red, green, and blue colors.

21. The method according to claim 19, wherein forming the color filter layer includes:

transferring color filter material having a first color onto an outer surface of a roller as first pre-formed color filters;

roll-printing the first pre-formed color filters onto the surface of the light-to-heat conversion layer;

transferring a color filter material having a second color onto an outer surface of a roller as second pre-formed color filters;

roll-printing the second pre-formed color filters onto the surface of the light-to-heat conversion layer adjacent the first pre-formed color filters;

transferring a color filter material having a third color onto an outer surface of a roller as third pre-formed color filters; and

roll-printing the third pre-formed color filters onto the surface of the light-to-heat conversion layer adjacent the second pre-formed color filters.

22. The method according to claim 19, wherein

the first color includes a red color;

the second color includes a green color; and

the third color includes a blue color.

23. The method according to claim 19, wherein the base film is includes a transparent material.

BEST AVAILABLE COPY

24. The method according to claim 23, wherein the transparent material includes a polymeric material selected from a group consisting of polyester, polyethylene and polyacryl.
25. The method according to claim 19, wherein the light-to-heat conversion layer includes an organic chemical compound including one of carbon black and infra-red (IR) pigment.
26. The method according to claim 19, wherein the light-to-heat conversion layer includes an inorganic material including one of aluminum and aluminum oxide.